

## CLAIMS

1. An apparatus for processing calls in a communication system, the apparatus comprising:  
a controller to receive an indication of a first call and to instantiate a first call control state machine of a type in accordance with a type of the first call, the first call control state machine being used to control processing of the first call.
2. The apparatus of claim 1 wherein the controller receives an indication of a second call and instantiates a second call control state machine of a type in accordance with a type of the second call, the second call control state machine being used to control processing of the second call.
3. The apparatus of claim 1 wherein the controller determines a first service option connection for the first call, the first service option connection including information indicative of a set of parameters to be used for data transmission with respect to the first call.
4. The apparatus of claim 3 wherein the set of parameters includes parameters identifying one or more physical channels to be used for data transmission with respect to the first call.
5. The apparatus of claim 2 wherein the controller determines a second service option connection for the second call, the second service option connection including information indicative of a set of parameters to be used for data transmission with respect to the second call.
6. The apparatus of claim 5 wherein the set of parameters includes parameters identifying one or more physical channels to be used for data transmission with respect to the second call.

7. An apparatus for processing calls concurrently, comprising:
  - a controller to receive an indication of a first call to be processed, the controller to determine a first service option connection to be mapped to the first call and to instantiate a first call control state machine of a type in accordance with a type of the first call, the first call control state machine being used to control processing of the first call, and the controller to establish a set of one or more physical channels associated with the first service option connection to be used for data transmission.
8. The apparatus of claim 7 wherein the controller instantiates a separate call control state machine for each subsequent call to be processed, the instantiated call control state machine is of a type in accordance with a type of the respective subsequent call.
9. The apparatus of claim 7 wherein the controller determines, for each subsequent call, a service option connection to be used for data transmission and maps each subsequent call to the respective service option connection.
10. The apparatus of claim 10 wherein, in response to a directive to release a particular call, the controller releases the respective call control state machine associated with the particular call.
11. The apparatus of claim 10 wherein the controller determines whether a particular service option connection is mapped to any active call and releases the particular service option connection if the particular service option connection is not mapped to any active call.
12. An apparatus for processing calls, comprising:
  - a control processor to implement a call processing state machine including a first state indicative of a period of synchronization with a particular communication system, a second state indicative of a period of monitoring of a paging channel, a third state indicative of a period of accessing a base station in the particular communication system, and a fourth state indicative of processing of at least one active call, each active call being associated with a call control state machine.

13. The apparatus of claim 12 wherein the call control state machine for each call being processed is of a type selected based on a type of the respective call being processed.

14. The apparatus of claim 12 wherein the fourth state includes a first substate indicative of data transmission of traffic channels, a second substate indicative of data transmission for a particular call, and a third substate indicative of termination of the particular call.

15. The apparatus of claim 12 wherein the call control state machine associated with a voice call or a data call includes:

a first substate indicative of a wait for an alert with information message to process the respective;

a second substate indicative of a wait for a user response to the respective call;

a third substate indicative of a period of permissible transmissions for the respective call; and

a fourth substate indicative of termination of the respective call.